High Performance Computing Software

JPL Internal Seminar Series

Simulations of Global and Regional Seismic Wave Propagation

by

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12:00 noon – 1:00 p.m.
Building 126, Room 225

We use a Spectral-Element Method (SEM) implemented on the Earth Simulator to model seismic wave propagation. The SEM is based on a weak formulation of the equations of motion and combines the flexibility of a finite-element method with the accuracy of a pseudospectral method. The numerical simulations incorporate 3D variations in compressional-wave speed, shear-wave speed, and density, attenuation, anisotropy, ellipticity, topography and bathymetry, and crustal thickness. The largest calculation involves 4056 Earth Simulator processors (507 8-processor nodes), 7.3 terabytes of distributed memory, and 36.5 billion degrees of freedom, and runs at 10.7 teraflops.

For questions, please contact Dan Katz at 4-7359.